

V. REMARKS

Entry of the Amendment is proper under 37 C.F.R. §1.116 because the Amendment: a) places the application in condition for allowance for the reasons discussed herein; b) does not raise any new issue requiring further search and/or consideration because the Amendment amplifies issues previously discussed throughout prosecution; c) does not present any additional claims without canceling a corresponding number of finally rejected claims; and d) places the application in better form for appeal, should an Appeal be necessary. The Amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. The amendments to the subject claims do not incorporate any new subject matter into the claims. Thus, entry of the Amendment is respectfully requested.

Claim 13 is rejected under 35 U.S.C. 112, first paragraph. As a result of amending claim 1 in a manner as set forth above, it is respectfully submitted that the rejection is obviated. Withdrawal of the rejection is respectfully requested.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as unpatentable over Philip Anthony Voaden (EP 0392674) in view of the Sado et al. (U.S. Patent No. 4,971,748). The rejection is respectfully traversed.

With the die 2 of Anthony, the molding surface is in the form in which a large number of projections 3 are formed on a plane plate as opposed to the molding surface according to the present invention, which is in the form of a concave surface. In addition, the bending deformation made of a polyimide film in an initial stage is carried out only by suction (vacuum) according to Anthony as opposed to pressurization of gas made according to the applicant's present invention.

In the case of Anthony, the polyimide film is contacted with a large number of projections 3 in the initial stage [see Fig. 2 (c) and (d)], and in such condition, suction is applied, whereby it cannot be avoided that the surface of the film undergoes drawing or squeezing action. As a result of the above, it tends to occur that the film surface undergoes scratches and/or unevenness is generated in or to the web thickness of the film. Thus, according to Anthony, the object of the invention according to the applicant's claimed invention can never be attained.

According to the applicant's claimed invention, the polyimide film is never touched by the molding surface until a last moment of the final stage, so that the

open type polyimide molding product can be molded with no scratches on the surface, with no defect such as unevenness in the thickness and air cavities and in a state free of whitened portions or puncture. Accordingly, when a metal is vacuum deposited to the molding product to manufacture a reflector for use in illumination equipments for instance, a reflectivity is high and reflected light at high efficiency can be reflected. Further, since the molding product transferred with the pattern on the surface of the die according to the manufacturing method of this invention can transfer the pattern of the die surface faithfully, a surface of good appearance can be obtained.

The invention of Sado et al. consists in shaping a film by a press-stretching method.

According to the press-stretching method, from the outset the film surface is pressed by a molding surface, so that it is almost absolutely impossible to avoid generation of scratched injuries on the film surface and of unevenness in or of the film thickness.

Claim 1 is directed to a method of manufacturing an open polyimide molding product which comprises:

bringing a polyimide film into an intimate contact with a molding die having a concave molding surface so as to tightly close an open end thereof to form a space on the side of the molding die surrounded by the polyimide film and concave molding surface;

disposing a pressing die to the open end of the molding die so as to seize the polyimide film to form a space on the side of the pressing die surrounded by the polyimide film and an inner surface of the pressing die;

bending, during an initial stage, to deform the polyimide film under contactless heating only by pressurizing gas in the space on the side of the pressing die; and

at a final stage of the bending deformation, simultaneously depressurizing gas in the space on the side of the molding die and pressurizing gas in the space on the side of the pressing die thereby bringing the polyimide film into intimate contact with the concave molding surface to eliminate a gap between the polyimide film and concave molding surface.

It is respectfully submitted that none of the applied art, alone or in

combination, teaches or suggests the features of claim 1 as recited immediately above. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

Claims 2-12 depend from claim 1 and include all of the features of claim 1. It is respectfully submitted that the dependent claims are allowable at least for the reasons the independent claim is allowable as well as for the features they recite.

For instance, claim 2 recites the polyimide film is heated in a contactless manner by disposing a heating portion to the pressing die and/or the molding die thereby radiating radiation heat and/or releasing a heating gas from the pressing die.

Claim 3 recites that a porous metal is disposed to the concave molding surface of the molding die. Claim 8 recites that the molding section comprises a molding die having a concave molding surface and a pressing die in press contact with an open end of the molding die. For these additional reasons, it is respectfully submitted that claims 2, 3 and 8 are allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

In the Response to Arguments in the Office Action on pages 3 and 4, it states:

With respect to claims 2 and 8, Applicant further argues that Anthony does not teach that the pressing die is disposed to the open end of the molding die. The Examiner respectfully disagrees. The Examiner understood the autoclave to read on the claimed pressing die for reasons stated in Paper #3. Applicant has not argued why the autoclave does not read on the claimed pressing die. Thus, rejection is maintained.

The autoclave of Paper #3 is merely a heating box. Although it is held by the Examiner that the autoclave reads on the claimed pressing die, the heating box is not possessed of the function of the pressing die that it holds a film between itself and a molding die and forms a pressurizing space. Thus, an autoclave and a pressing die come under absolutely different means or devices. For these reasons, withdrawal of the rejection is respectfully requested.

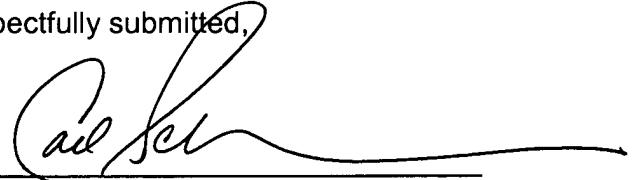
In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the

telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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Enclosure(s): Amendment Transmittal
 Petition for Extension of Time (one month)

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